Competitive Pressure and Its Social Consequences in EU Member States and in Associated Countries

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Literature survey on labour market developments in candidate countries, and on the labour market consequences of competitive pressure

Deliverable 9

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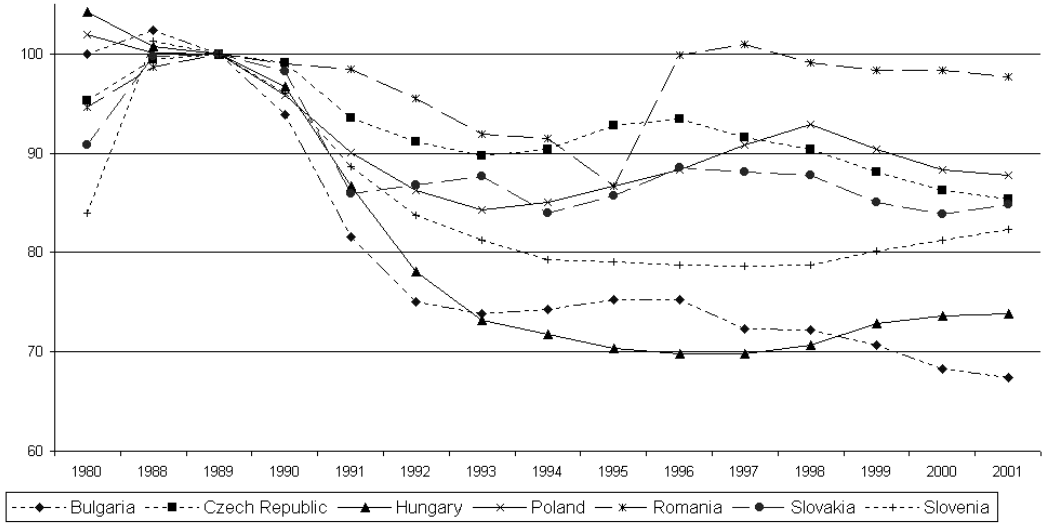
1. Employment

There is a broad consensus in the literature that centrally planned economies achieved (almost) full employment at the cost of substantial labour hoarding at the firm level. Kornai (1980 and 1992) gives a detailed description of the mechanisms leading to excess labour demand in a traditional socialist economy. Köllő (1998) and Lehmann and Schaffer (1995) give two alternative theoretical models of corporate labour demand in reformed socialism. Transition to market economy quickly changed these characteristics of the labour markets in many economies. Figures 1 and 2 depict employment trends in selected eastern Central European countries, and in major regions of the former Soviet Union.[1]

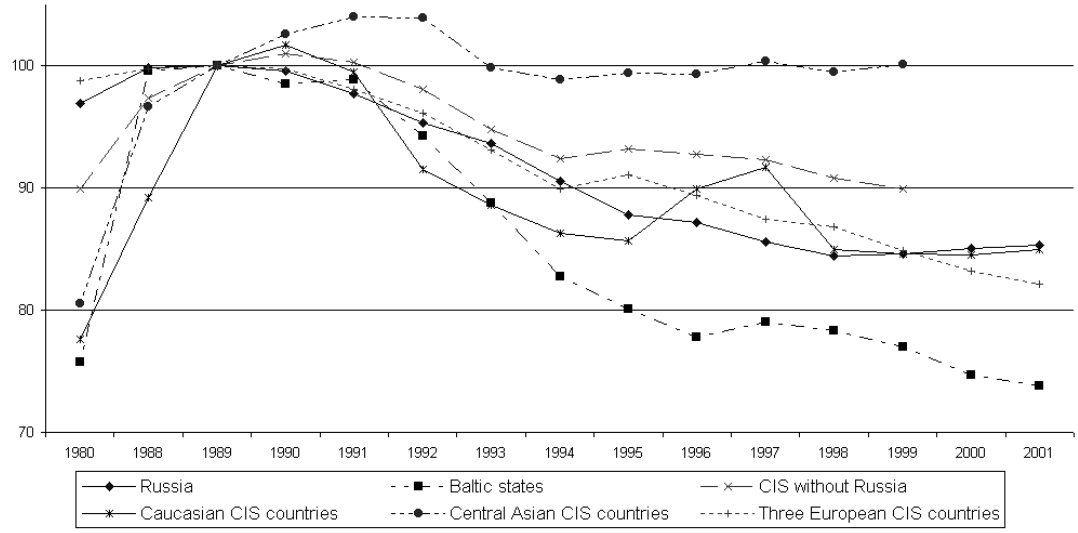
Figure 1: Employment in eastern Central Europe, 1989=100



Employment fell in all countries after transition started (in 1989-90 in the Central European countries, and in 1991-2 in the former Soviet Union), although the speed and magnitude varied substantially. The drop in aggregate employment was considerable, while recovery is slow and unstable at best. Most Central European and Baltic economies experienced a sudden drop after transition started, while the Czech Republic and most CIS countries had a more gradual, but frequently also more prolonged decline. Large-scale unemployment became a prominent characteristic of all Central European labour markets, leading to an unemployment situation similar to many Western European economies, but with an important difference in the employment history of the region.

[1] Data source: Economic Survey of Europe, 2003/1, UNECE.

Figure 2: Employment in the former Soviet Union, 1989=100



Unemployment ratios vary a lot over the region. Frequently, unemployment is long-term: the share of long-term unemployment is close to 50% in most CEE economies, although usually smaller in CIS countries. Flows from employment to unemployment are usually rather moderate after the initial transitional shock. However, flows leaving unemployment for employment are relatively small in almost all transition economies, compared to developed market economies. This indicates that many people left the labour market, either permanently, taking early retirement or disability pension, or long-term; sometimes voluntary, but frequently with the intention of returning to employment, if it becomes possible. There seems to be a group of non-employable people in all these economies. These people used to work before transition, but they lack the skills necessary for finding a job in the emerging market economy. Especially, the gender specific employment gap increased substantially in most countries during the transition period. This type of 'new inactivity' may indicate an additional pressure on the labour markets of CEE economies, as social traditions were shaped under full employment. (*C.f.,* Svejnar (1999), Boeri and Terrell (2002), Nesprova (2002).)

Take a person who is 40 now. He was out of work for the best part of the past decade. He has more than 20 years before he reaches retirement age and so his employment problem will stay with us for a long while. He was 25 in 1988, just before transition started, but when everybody was unaware about its imminence. His education had been completed some years before, and subsequently he was permanently employed. Even if he was not highly skilled, his job was secure as there were shortages on the labour market (except in the former Yugoslavia).

Significant shifts in labour demand have favoured people, who were more skilled and better educated in developed market economies throughout the twentieth century. (For example, Goldin and Katz, 1999.) But this was not the case for late socialism: there was very little structural change, and technical progress was very slow in the 1970's and 1980's. Thus, our worker grew up in a stagnant society, where little changed. Education opportunities were artificially constrained, and because the wage premium paid for the additional education was small, there was little incentive to study beyond the basic level. He was trained exactly for the skills needed for his job. He was unprepared for any substantial change. His skills were limited to the particular needs of a particular economy and he worked with outdated technology in a poorly organized work environment. That was the norm. Continuing education was untypical; it was assumed that he would be continuing more or less the same work until retirement. And, of course, he was business illiterate. (Even well educated people tended to be unaware of the normal working of a modern market economy, and the skills relevant to cope with it, *c.f.,* Campos and Dabušinskas (2001) .)

Our worker's skills are, however, inadequate in the suddenly emerging market economy, and low skilled people have significantly worse employment chances. Table 1 compares the employment probabilities of poorly educated people to the average in the three most successful transition economies, and in some traditional market economies of similar size.

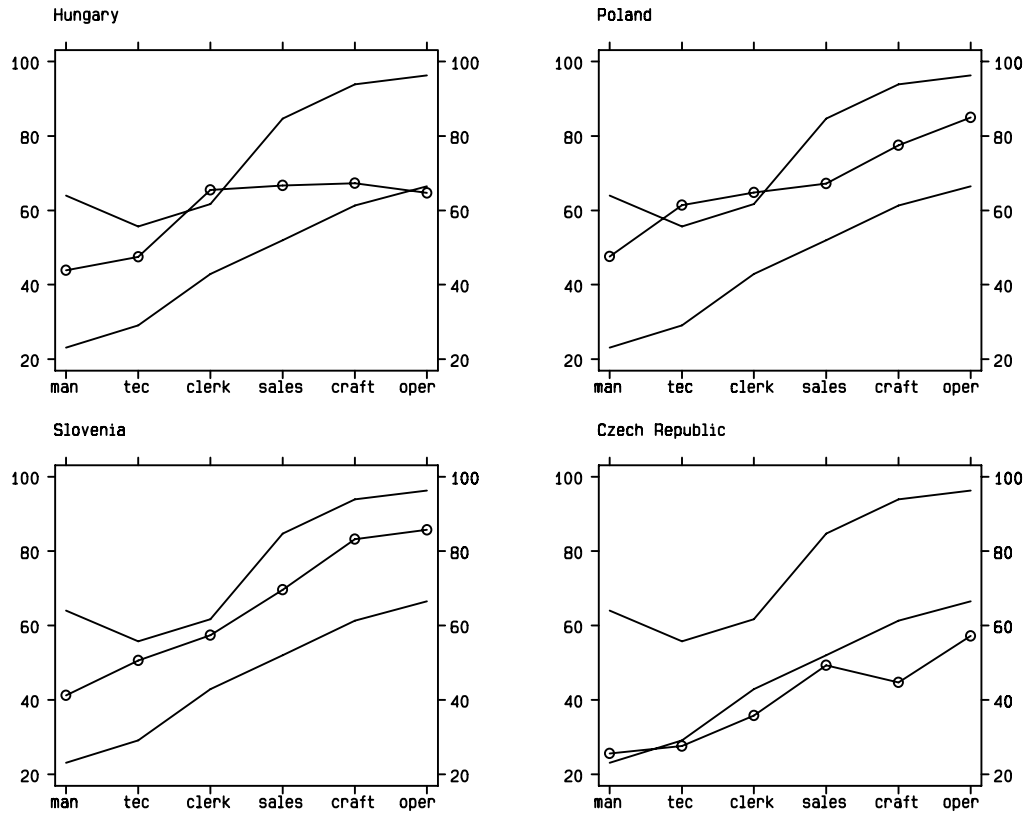
Table 1. Employment ratios of the population aged 25-62 by level of educational attainment, 1998

		Employment ratios (per cent)					
	Share of	Men			Women		
	ISCED 0/1 and 2	All levels	ISCED 0/1 and 2	Diff-erence	All levels	ISCED 0/1 and 2	Diff-erence
Hungary	33	69.1	37.1	32.0	53.9	31.6	22.3
Poland	24	75.9	57.4	18.5	60.5	40.7	19.9
Comparators							
Austria	28	80.7	65.3	15.4	60.3	45.1	15.2
Finland	28	76.2	61.6	10.9	69.8	57.8	12.0
Czech Rep.	16	82.9	57.6	25.3	63.4	41.8	21.6
Comparators							
Denmark	20	84.0	69.0	15.0	73.2	55.7	17.5
Germany	19	76.9	62.5	14.4	59.7	40.4	19.3

Source: Education at a glance, OECD, Paris, 2000, Tables A2.1b and E1.1–E1.2.

It is clear that poorly skilled people are much worse off in transition economies, as their skills have been substantially depreciated during the transition period, although the situation is somewhat better in the Czech Republic. One reason for these differences is that, except in the Czech Republic, education in socialist economies did not provide the same skills as in the developed market economies. While some schools and universities excelled in mathematics and science, the median school leaver was not properly equipped even with basic literacy skills. Figure 3 compares literacy skills in four transition economies with the OECD average on the one hand, and to those in Chile on the other. The transition countries (except the Czech Republic) are more similar to Chile than to the developed OECD countries.

Figure 3: Percentage share of workers with poor literacy skills (levels 1 and 2), by occupation



IALS sample mean (lower curve), Chile (upper curve), four transition countries (marked curves). Symbols: Man: manager, Tec: Technician, Clerk: clerk, Sales: sales and service employee, Craft: skilled craft worker, Oper: Machine operator/Assembler.

Source: Literacy in the information age, Statistics Canada, 2000, Annex D, pp. 169-171.

This higher effective skill level is one possible explanation for the 'Czech miracle' (*c.f.*, Boeri and Burda (1996), or Munich et al (1998)). But in other countries the relatively high level of education in the socialist system does not necessarily represent a high skill level in a market economy. Skill-biased technical progress has suddenly arrived in the transition economies. And those who have been unable to work for years lose a substantial part of their former technical and social skills.

Transition economies, especially CEE countries, adopted standard labour market policy measures for fighting unemployment, both the active and the passive policy tools. However, these institutions were introduced into a different environment. Some policies may have been poorly implemented, as there was no tradition of using them, and trade unions are feeble all over the region. But in many cases standard policies are just inadequate for handling the severe skill mismatch problem. The issue is further aggravated by large regional disparities and very low migration rates. On the one hand, all countries have got their industrial rust-belt of regions where mining and heavy industries dominated. On the other, employment chances are frequently very low in rural areas. (*C.f.*, Boeri and Burda (1996), Boeri and Terrell (2002), Commander and Coricelli (1995), Fidrmuc (2001), Galasi (2003b), Galasi and Nagy (1999), Köllő (2001), Lehmann (1995), Micklewright and Nagy (1996, 1998), Munich et al (1998, 2003), Puhani (1998), and Sorm and Terrell (2000).)

2. Labour reallocation

The initial cause for the decline of employment usually was the output loss at the beginning of the transition process. Productivity increased rapidly in many economies since the mid- to late 1990's. That frequently led to a period of rapid economic growth, but usually without much growth in aggregate employment. However, the apparently stagnant employment frequently disguises a substantial reallocation of labour.

The methodology for analysing job flows and labour reallocation was introduced by Davis and Haltiwanger (1992) and Davis et al (1996). They suggest to analyse a decomposed measure of job creation and destruction instead of aggregate employment figures. First employers are separated to two subsets: one representing those entering market or expanding employment, the other representing those employers downsizing employment or exiting the market. Several useful measures are calculated from these subsets: gross job creation, destruction and reallocation, and net measures as a balance of the gross job flows.

The typical annual gross job creation and destruction rates are in the neighbourhood of 10% for many developed market economies, giving an approximate 20% gross reallocation rate for a typical sector. Excess job reallocation rate measures the flexibility of the labour market: its value is typically in the range of 5% (inflexible) to 15% (flexible) for developed market economies. However, there are very characteristic variations over countries and sectors, indicating different levels of flexibility and maturity of the specific market, *c.f.*, Davis and Haltiwanger (1999).

There also are characteristic differences in job-flow rates among different types of firms, differentiated by size, life cycle, productivity, and ownership structure (*e.g.*, Albaek and Sorensen (1996), Baily et al. (1996), Foster et al (1998), Griliches and Regev (1995), or Leonard and Zax (1995)). One important characteristic feature is the *persistence* of these job flows; Davis and Haltiwanger (1999) suggests that only some 20-30% of the job flows are reversed in the next period; thus the overwhelming majority of these changes are long-term adjustment.

It is no surprise that practically all CEE economies were characterised by massive job destruction (with typically 9-13% rates) and little job creation (with approximately 1% intensity) during the initial transitional recession. That was the mechanism creating very substantial unemployment within a relatively short period in many countries; *c.f.*, Bilsen and Konings (1998), Konings (2002), Commander and Coricelli (1995), Haltiwanger and Vodopivec (2002) or Blanchard (1997). Differences in job flows were frequently very strongly linked to shifts in the ownership structure, to the privatisation process; *e.g.*, Chow et al (1996) or Konings et al (1996). Job reallocation is frequently from the old (formerly) state owned to the new (private) sector of the economy, *c.f.*, Sorm and Terrell (2000) or Jurajda and Terrell (2002 and 2003).

Recent studies found that in CEE and Baltic countries job flows became rather similar to the typical situation in developed market economies. Konings (2001) found that excess job reallocation rates reached the levels of developed market economies in the most successful transition economies (between 8 and 13% for Estonia, Poland and Slovenia) by the late 1990's. Even in Bulgaria, hit by very large negative aggregate shocks, simultaneous job creation and destruction within narrowly defined sectors, regions and firm types was quite common. In addition, he found that most of the job reallocation occurs within sectors and regions, rather than across sectors and regions. Still, inter-industry reallocation is more intensive than in many market economies, especially from agriculture and heavy industries to service sectors. Haltiwanger and Vodopivec (2002) found that by the end of the 1990's the Estonian situation was very

similar to the reallocation levels seen for the US manufacturing. Faggio and Konings (2001), and Jurajda and Terrell (2002) found that both the rapidly reforming countries, like Estonia, Poland or Czechia, and the more slowly reforming Bulgaria, Romania and Slovenia converge to the standards of market economies after the initial stage of transition was over. Markov et al (2002) also examined skill-specific job reallocation for Bulgaria; they found that the private, especially, the foreign-owned sector strongly differentiated labour by its skills.

Small and new private firms contribute disproportionately to job creation according to several studies, creating the previously missing small enterprise sector in a relatively short time. However, this is the most volatile segment of the economy, with a high level of firm turnover.

Kőrösi (2003) finds a different picture for Hungary: The Hungarian job flow figures from the period 1993-2000 are much higher than those reported for most other transition economies for this period. Reallocation was extremely rapid between 1993-5, with job destruction dominating, but also with relatively high job creation rates. The intensive job reallocation reflects a very fast differentiation of firms. Changes of corporate positions are strongly related to ownership: state-owned enterprises are the least flexible one's, with very little gross job creation. Domestic private firms are more active, but still net job destroyers. Foreign-owned enterprises are the most dynamic firms, they are the net job creators of the Hungarian economy. Small firms were reallocating labour much more intensively than greater ones: however, continuing small enterprises intensively destroyed jobs. Both job creation and job destruction was very persistent: the average job destruction persistence ratio was well over 90% in all years, while the typical sectoral job creation ratio varied between 80 and 90% after 1995. The extreme persistence of job destruction is almost uniform over the various categories of firms. If a company had to downsize, it is almost impossible that the company rehires its employees. Job creation is also much more persistent in Hungary than in the developed market economies reported on in Davis and Haltiwanger (1999). However, the picture is less uniform than with job destruction. There is one group of firms with much less persistent job creation: the small firms.

Brown and Earle (2002b, 2003a, b) show that job reallocation is strongly linked to productivity growth even in Russia and in some other former Soviet republics, where job reallocation otherwise is slower than in the CEE region, and job creation is still paltry. Both they and Konings et al (2003) demonstrate that small firms are relatively

much more important job creators than larger ones. Christev et al (2003) tried to link Ukrainian job flows to trade liberalisation, but found no significant overall effect.

The Haltiwanger and Vodopivec (2003) analysis of Slovenian job flows also demonstrates that reallocation is strongly related to wages. Firms with compressed wage distribution have higher job flows. The study, however, does not establish a causal link between firm wage policies and job flows. Interestingly, Munich et al (2003) found no direct relationship between earnings and labour reallocation in the Czech Republic.

Warzynsky (2003) analysed the relationship among job flows, labour productivity and measures of competitive pressure for Poland. A competitive market structure, measured via import competition and concentration, is associated with higher pace of labour reallocation. Fast growth of labour productivity also enhances reallocation, but that link is less robust over model specifications.

Foster et al (2003) established links among reallocation, productivity and market power, using a sample of US manufacturing firms of sectors with homogeneous products. Their dataset also consists of firm specific price information, and they also describe the relation of productivity and reallocation with price differences.

3. Labour demand

Relatively fewer papers analysed labour demand in transition economies with the notable exceptions of Basu et al. (1997), Christev and Fitzroy (2002), Estrin and Svejnar (1998), Grosfeld and Nivet (1997), Kertesi and Köllő (2002), Konings and Lehmann (2002), Köllő (1998), Kőrösi (1997, 2002) and Markov et al (2002).

Basu et al (1997) and Estrin and Svejnar (1998) use the same survey dataset, which is most informative on the former Czechoslovakia; both studies suggested rather moderate elasticities of demand for the initial transition years, except for one single year of macroeconomic shock and transitional recession. Labour demand equations estimated by Singer (1996) from monthly data actually suggested that the Czech labour market experienced a reversal of adjustment a few years after transition: firms were rehiring previously dismissed workers, as output fall was smaller than expected.

Grosfeld and Nivet (1997) also suggested that the bulk of the adjustment occurred in one single transition year (1991) in Poland, after which Polish corporate labour demand was very similar to that of mature market economies. Christev and Fitzroy (2002) found that Polish labour demand was strongly asymmetric in the initial years of transition: demand only reacted to downsizing output. However, they did not find significant wage effect on employment.

Konings and Lehmann (2002) estimated labour demand equations for large Russian firms. They found that demand was rather inelastic with respect to wages (–0.18). This is lower than in most transition economies, but actually in the range observed for developed market economies, indicating that Russian firms respond to wage changes. State-owned firms, however, are adjusting much more sluggishly than others.

Markov et al (2002) found for Bulgaria that the long-run output elasticity in the labour demand models was rather law (in the order of 0.4 – 0.6), and it was robust over model specifications including ownership structure and skill composition. The long-run own wage elasticities indicated that the demand for non-skilled labour is much more elastic than that for skilled labour. Firms with foreign participation are featured with the highest own wage elasticity of labour demand. The probably most surprising outcome was the very low own wage elasticity of labour demand in *de novo* private firms.

Kertesi and Köllő (2002) also analysed the heterogeneity of labour demand with respect to the heterogeneity of labour for large Hungarian enterprises between 1992-9. Unskilled and skilled labour were found to be *p*-complements, and younger and older skilled workers *p*-substitutes. Elasticities settled down in a range of –0.5/–1.0 for skilled and –1.0/–1.5 for unskilled workers after 1995. The high own-price elasticity of unskilled labour and its high degree of substitution with capital suggested that the unskilled labour market remains a fragile segment of the economy. Foreign-owned firms had relatively high demand for unskilled workers holding relative factor prices constant in 1992-3, but the difference between them and domestic firms changed sign in 1994-7 and virtually disappeared in 1998-9. The break in the trend is probably explained by the expansion of foreign firms in the field of industrial mass production at the end of the decade.

Köllő (1998) identified three stages of labour market behaviour in Hungary: an initial adjustment to market conditions in the pre-transition period, a fast transition with very volatile labour market between 1989 and 1992, and slower, but substantial changes.

Kőrösi (1997) found qualitatively similar results, although he shows that even these three periods are far from being homogeneous. He found strong evidence against a stabilization of labour market behaviour of the Hungarian corporate sector. He also found strong evidence for a substantial asymmetry of adjustment costs of employment to the new market conditions in the fast transition period. Kőrösi (2002) further investigated this asymmetry, and found that it is related to sectoral aggregation. Using very disaggregated sectoral classification removed most of the asymmetries. It was found that output elasticity of labour demand stabilized at somewhere between 0.4–0.5 for most sectors and firm categories after 1994. However, the wage (labour cost) elasticity of demand was unstable throughout the 1990's. Its value ranged from –0.6 to –0.9 before 1995 for most groups of firms, however, demand became gradually less elastic. It usually was somewhere between –0.4 and –0.2 by the late 1990's. Wage elasticity reacted sensitively for the inclusion of variables describing the competitive position and efficiency of the firm, while output elasticities were much more robust over specifications.

Mathieu and Nicolas (2002), and Surányi (2002) both analyse the functional form and speed of the labour adjustment process. Mathieu and Nicolas (2002) compares adjustment of labour demand in Czechia and France. There are important differences between the two countries as regards the adjustment costs functions. While substantial adjustment costs were estimated for the French firms, the adjustment costs were either zero or very low for the Czech Republic. This conclusion suggests that the effective level of rigidities present on the Czech labour market is negligible in the period 1993–1998. Surányi (2002) reached very similar conclusions when analysing Hungarian firms: the adjustment costs were low relative to the values found in developed market economies. Costs per worker amounted to maximum 3.6 times the monthly wages (on average), while in developed market economies they could be as high as 12–14 times the monthly wages (Hamermesh, 1996). The marginal cost of adjustment, forecast by the best model, was less than twice the monthly wage. Ownership also matters: adjustment at Hungarian-owned firms is much slower than that of foreign-owned ones.

Both Markov et al (2002) and Kőrösi (2002) analysed the consequences of efficiency wage hypothesis for Bulgaria and Hungary, respectively. The starting point of this analysis is the firm level efficiency. Corporate and economy wide efficiency theoretically can be increased fast by just a proper matching of resources and establishing the relevant links between partner firms. However, many companies face very serious liquidity constraint, thus they frequently are unable to finance trivial

investments. Large decreases in real wages and employment does not necessarily constitute the best way to increase corporate efficiency of these firms. Many studies have shown that there exists a link between the level of wages in a firm (relatively to the expected outside wage) and labour efficiency: The efficiency wage hypothesis, which can be justified on several grounds (c.f., Akerloff and Yellen, 1986), cannot be ruled out, i.e., other things being equal, firms paying higher wages benefit from a more efficient labour input. In that context, the optimal behaviour of firms is *not to reach the maximum possible efficiency* in their use of labour, but the one, which corresponds to the unity of the elasticity of the efficiency function with respect to the wage. Due to labour adjustments costs, firms do not necessarily find it optimal to immediately adjust their employment level when they face a (positive or negative) shock on wages and/or output. However, this 'lack' of adjustment leads to some productive inefficiency, as compared to the situation where inputs would immediately be adjusted. The specification also estimated skill elasticity of labour demand, characterising the composition of labour.

Markov et al (2002) got paradoxical outcomes in the testing of the efficiency wage hypothesis for Bulgaria: according to their estimation results, at SOEs there was a stronger statistical association between wage levels and productive efficiency than at private firms. There tends to be a stronger link between wage levels and productive efficiency in the case of non-skilled workers than in the case of skilled employees.

Kőrösi (2002) found that the driving force behind inefficiencies mostly was the inadequate capital adjustment. Skill elasticity was also very high, especially in the early transition period, but also towards the end of the 1990's, in the fast recovery period. It indicates that firms hoarded skilled labour in these two periods, indicating that the lack of properly skilled workers seriously constrained the development of the firms.

4. Wages

Transitional recession brought substantial real wage decline to the region. Real wages dropped much more in CIS than in CEE economies on average. This real wage loss was accompanied by a substantial increase of wage and income inequalities in practically all transition economies. Also, wage arrears became widespread in many CIS economies for years after transition, most notably in Russia.

Most of what is known about the revaluation of human capital in Central and Eastern Europe comes from estimates of Mincer-type earnings functions. Svejnar (1999), and Boeri and Terrell (2002) provide comprehensive reviews of relevant studies. The adverse implications of systemic change for unskilled workers are well known and supported by robust evidence from all countries of the region. They lost out both on employment chances and wages, if they found jobs. Returns to higher education increased especially quickly in the early stages of transition, but all studies found that returns to reasonable education increased substantially all over the region, while vocational training was devalued. The only notable exception was East Germany: Krueger and Pieschke (1995) found that returns to higher education actually decreased after unification. German labour market devalued the skills of East German workers. Kertesi and Köllő (1999) also found a second upswing of returns to higher education in the late 1990's: during the rapid economic growth returns to university degree increased substantially, exceeding typical Western levels. They also observed that the relative wages of older skilled workers failed to increase after 1992, thus increasing skill specific returns only affected the young generations.

Most studies observed declining returns to experience, but empirical evidence is somewhat ambiguous. Rutkowski (1996a) and Puhani (1997) presented evidence of falling returns in *Poland* 1987-92 and 1992-95, respectively, but not later. Kertesi and Köllő (1999), and Halpern and Kőrösi (1998) both observed substantial decline in returns to experience in Hungary. In the former *Czechoslovakia* Vecernik (1995), Flanagan (1995) Chase (1997), Sakova (1998a), and Filer et al. (1999b) all observed declining returns to experience in early stages of the transition, but a study using retrospective wage data by Munich et al (2000) detected no change in the experience-wage profile between 1989 and 1996.

Several papers on the *former GDR* (Steiner and Bellmann 1997, Burda and Schmidt 1997, Krueger and Pischke, 1992) suggested that the returns to experience fell after re-unification but no decline was observed by Steiner and Wagner (1997) in their female sub-sample. In contrast to other studies Franz and Steiner (1999) estimated completely flat experience-wage profiles for men both before and after the unification, and falling returns for women.

For Slovakia Rencko (1995) reported that in 1994 about two thirds of employees were receiving less than twice the minimum wage and 90 per cent were below the level of three times the minimum wage. This led to the conclusion that at the initial stage of transition, wages were viewed more as a tool of macroeconomic stabilisation, while

neglecting the microeconomic functions of wages, especially those pertaining to the motivation of workers. Rutkowski (1996b) found Slovakia was an outlier among all the examined transition economies with respect to wage differentiation, having the lowest degree of wage inequality and low levels of relative poverty incidence. Filer et al (1999) estimated development of returns to education in Slovakia using wage survey data. The analysed sample ranged from 1.9 to 3.9 per cent of the total labour force in the Slovak Republic. For 1997 the coefficient capturing the effect of college education as compared to primary school education was 0.7. A comparable figure for the Czech Republic was 0.8. Roughly comparable figures from other studies for other countries include 0.64 for the United Kingdom, 0.73 for Western Germany, 0.56 for Italy and 0.42 for Sweden. Thus, by 1997 the returns to education in Slovakia had reached the level observed in traditional market economies. Lubyova (2001) found that returns to education increased more in the private sector than in the public sector and more among young workers than among older workers. The rate of increase was approximately equal for men and women. Among other interesting results, returns to education in Slovakia increased substantially between 1995 and 1997, when they reached a level two to three times higher than in 1984.

Sabirianova Peter (2003) estimates a model explaining the importance of different possible causes for the observed shifts in returns to higher education from a Russian matched employer-employee dataset. She found that the increased skill wage premium has been driven mainly by institutional factors during the early period and by productivity and technological change during the late transition period, and reinforced by market adjustment of wage ratio to the true differences in labor productivity.

Kertesi and Köllő (1996) estimated wage equations for a Hungarian corporate sample. They repeated their analysis on an largely extended sample for Fazekas and Koltay (2002). Wages paid by foreign-owned business significantly exceeded – by over 50 percent in 1998, for instance – the average for business where the majority ownership was domestic. Productivity and size were the most important explanatory variables for corporate wage rates. Foreign- and domestic-owned companies had different coefficients: for foreign-owned firms size was the most important explanatory variable, while for domestic firms productivity differences were more influential. The difference in industry rent is not random. Foreign businesses pay comparatively high wages in the low-wage sectors, or in other words, within the foreign-owned sector differences by industry/branch are much smaller than for domestic companies. That explains a substantial part of the wage differences by ownership. An interesting result of the original study is the emergence of wage curve (*c.f.,* Blanchflower and Oswald

1994): regional employment/unemployment had no effect in the corporate wage equation for the 1980's, but its coefficient became significant, with constantly increasing value in the 1990's.

Dobbelaere (2001) investigates how wage determination is related to ownership status in Bulgaria in 1997-8. It was found that rent sharing was nearly non-existent in foreign-owned firms while the level of pay is higher compared to state-owned companies. Further, rent sharing was highly pronounced in state-owned enterprises while on average domestically private-owned companies were characterised by less rent sharing.

Grosfeld and Nivet (1997) also estimated corporate wage equation for Polish firms. The most important explanatory variable was productivity. They found that change in revenue per employee leads to changes in wages over the period of 1990-94. There are significant differences according to ownership categories. They split their sample into those with increasing productivity and with decreasing productivity, in order to test for the hypothesis that the impact of productivity is asymmetric. The results confirm the hypothesis, as wages are found to be responsive to productivity at firms with increasing productivity. However, this is not the case for firms where productivity is decreasing.

Christev and Fitzroy (2002) employ again a similar panel of large Polish firms. Their dataset covers 1994-7, a later period than Grosfield and Nivet (1999), which may better capture some of the changes due to privatisation. They also hypothesise that change in revenue per employee will be a major determinant of change in wages, following the rent sharing and bargaining models. They are able to confirm this hypothesis. Their results confirm rent sharing behaviour in firms, where position of insiders is strong. They extend the scope of asymmetry analysis by looking for ownership-specific asymmetry effects. Yet their result differ from those obtained by Grosfield and Nivet (1999) for the earlier period. While overwhelming majority of the coefficients are insignificant, the two, corresponding to positive and negative effects for two different ownership groups are significant.

Bishop and Mickiewicz (2003) follow the above tradition of Polish wage modelling. They examined the disparity in wage setting between state companies, privatised companies and *de novo* firms. While they set out to test panoply of hypotheses, the most robust results relate to labour market conditions. In terms of both significance levels and consistency of sign, labour market coefficients dominated all other. The

value of the regional unemployment coefficient is quite stable and oscillated around two, indicating high short term cooling effect on enterprise wages. They also experimented with regional activity ratio instead, but as that did not bring improvements, they returned to the use of unemployment. There was a weak positive link between available quasi rent and wages in the state sector. The coefficient for the interactive effects on privatised and new private firms were negative, indicating that wages in the two sections of the private sector were less responsive to quasi rents. The simple ownership dummies did not perform as well, as a device to distinguish between ownership effects.

Damijan and Kostevc (2002) tested the hypothesis, that FDI inflows accelerate the regional adjustment process in the home country, therefore resulting in a faster convergence of relative regional wages; on a regional panel of five transition economies: Bulgaria, Estonia, Hungary, Romania and Slovenia. The evidence is rather heterogeneous: while the hypothesis seems to be justified for Bulgaria and Hungary, Estonia and Romania reacts in the opposite manner, while the evidence in Slovenia is inconclusive.

Nickell and Wadhwani (1990), in a seminal paper, examine the role of insiders in determining wages. Their model implies that quasi rent, profitability and—generally—firm financial conditions are important determinants of pay settlements. Therefore they include several financial variables in their wage equation, such as the debt-equity ratio and deposits-current liabilities ratio.

Nickell et al (1994), using a panel of British firms, show that product market power has a positive impact on wages. This impact is enhanced by size. Product market power also limits the negative effect of regional unemployment.

Kramarz (2003), using a matched employee-employer panel of French firms, demonstrates that firms facing strong import competition pay significantly lower wages. He attributes this difference to the decreased bargaining power of trade unions and/or employees.

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